NEW RECORDS OF FISHES FROM THE MEDITERRAEAN COAST OF ISRAEL INCLUDING RED SEA IMMIGRANTS

by

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ABSTRACT. – Records of fishes found recently on the Mediterranean coast of Israel are presented. *Arius thalassinus. Rachycentron canadum* and *Pempheris vanicolensis* are of Red Sea origin and their presence is attributed to the proximity of the Suez Canal. *Caranx dentex, Dentex maroccanus* and *Chromogobius quadrivittatus* are known from the adjacent regions of the Mediterranean Sea.

RÉSUMÉ. – L'auteur signale la présence de plusieurs espèces nouvelles pour la côte méditerranéenne d'Israël. *Arius thalassinus, Rachycentron canadum* et *Pempheris vanicolensis* sont originaires de la Mer Rouge et leur présence en Méditerranée est attribuée à la proximité du Canal de Suez. *Caranx dentex, Dentex maroccanus* et *Chromogobius quadrivittatus* sont connues d'autres régions voisines de la Méditerranée.

Keywords : Fishes, Lessepsian migration, MED Eastern Mediterranean, New records.

The three fishes of Red Sea origin found in recent years near the coast of Israel represent new records of families for the Mediterranean Sea. Only a single specimen was found of *Arius thalassinus* and of *Rachycentron canadum. Pempheris vanicolensis* is now a common fish among rocks and crevices of the coast of Israel. It has been also reported under the name of *Pempheris molucca* from the coast of Lebanon (Mouneimne, 1979). These three new immigrants bring the total number of Lessepsian (Suez Canal) immigrants in the Levant to 41 (Ben-Tuvia, 1985).

The three additional fishes reported for the first time from the coast of Israel are known from the adjacent countries. The distribution of *Caranx dentex* is considered to be in all warm seas with preference for subtropical regions (Hureau and Tortonese, 1973) but generally its synonymy and world wide distribution is not well known. It seems to be nowhere common enough to be of commercial importance. *Dentex maroccanus* is known from the warmer parts of the Mediterranean and eastern Atlantic. Individuals are occasionally caught by trawlers. *Chromogobius quadrivittatus,* a small goby inhabiting shallow coastal waters is known from the Mediterranean and the Black Sea.

The recent additions to the fish fauna of the Coast of Israel show that the Suez

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Canal immigration is a continuous process with new species for the area appearing periodically. Additional Mediterranean species, not recorded previously from the Levant, are expected to be found with more intensive sampling.

ARIIDAE

Arius thalassinus (Rüppell, 1835) (Fig. 1)

Bagrus thalassinus Rüppell, 1835 : 75, pl. 20, fig. 2 ; type locality : Massawa, Red Sea.

Material examined : Mediterranean : HUJ 11308, 152 mm, Haifa Bay, 12 October 1983, depth 4 m, caught in trammel net, presented by S. Pisanty. – Red Sea : HUJ 5032, 310 mm ; Massawa, 21 November 1957, coll. A. Ben-Tuvia ; HUJ 6613, 253 mm ; Massawa, 3 April 1961, coll. E. Gilat ; HUJF 6639, 160 mm, the same data as former; HUJ 11572, 150 mm, Massawa, 21 November 1957, trawl at 50-55 m, coll. A. Ben-Tuvia ; HUJ 11573 (3 spec.), 125-135 mm ; Eritrea, November-December 1967, coll. A. Ben Tuvia.

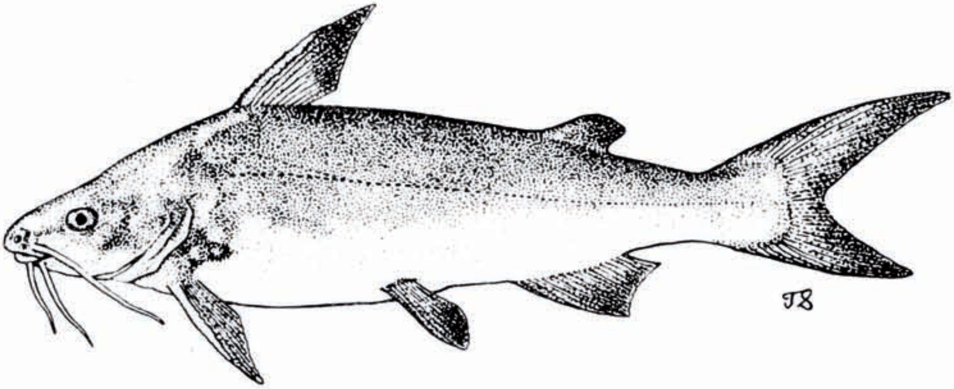

Fig. 1.– *Arius thalassinus*, 152 mm, Haifa Bay, HUJ 11308. (from Ben-Tuvia, A., in preparation. Fauna Palaestina, Pisces I, Mediterranean Fishes).

Description : D 16; A VI 11; V 15; P I 11. Head 25.0; depth 23.1; predorsal 32.1; preventral 50.3; distance between dorsal and adipose fins 32.6, all % SL. Snout 34.9; eye 17.6; interorbital 53.1; dorsal spine 63.5; pectoral spine 66.7, all % head length. Colour of fresh specimen : back dark green, belly silvery white, dorsal and caudal fins dark violet, adipose fin almost black, other fins light violet. In the preserved specimen the adipose fin remains dark, other fins light grey with dark tips.

Remarks : No differences were found between the Mediterranean specimens and the material from the southern Red Sea (Coast of Eritrea). The characters fit the descriptions of this species given by Rüppell (1835), Klunzinger (1871) Tortonese (1937), Fowler (1956) and Tylor (1964).

The available records of *A. thalassinus* in the Red Sea are confined to the coast of Eritrea. No specimens as yet have been reported from the Gulf of Suez and the

Suez Canal, although it is likely that this fish is presented there. The trawling grounds of the Gulf of Suez very much resemble the trawling grounds off Massawa where this fish is common in shallow waters.

The general distribution of the fish is given by Jayaram and Kailola (1984). It extends from the Red Sea and East Africa, through the Indian Ocean, to North Australia and Japan. According to the same authors it may reach a length of 1850 mm but specimens larger then 500 mm have not been observed by the senior author (A.B.T.) on the trawling grounds in the southern Red Sea.

According to the available literature the fish is described as euryhaline.

RACHYCENTRIDAE

Rachycentron canadum (Linnaeus, 1766) (Fig. 2)

Gasterosteus canadus Linnaeus, 1766, Syst. Nat., ed. XII : 491 ; type locality : Caroline

Material examined : Mediterranean : HUJ 9850, 766 mm, Haifa Bay, 10 Nobember 1978, caught by hook-and-line, coll. S. Pisanty. – Red Sea : HUJ 6179, 585 mm, HUJ 8950, 238 mm, both from Eritrea, 1957-1958, coll. A. Ben-Tuvia and O.H. Oren.

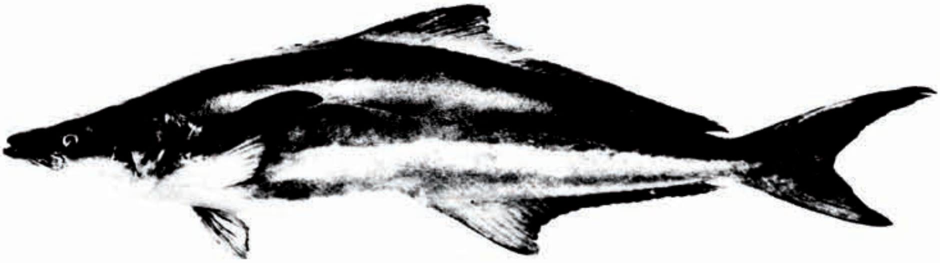

Fig. 2.– *Rachycentron canadum*, 766 mm, Haifa Bay, HUJ 9850.

Description : D VIII, IV 31; A IV 25. Head 24.4; depth 24.1; predorsal 47.6; preanal 59.4, all % SL. Snout 35.0; eye 10.7; interorbital 48.7; upper jaw 36.4, all % head length. Colour of fresh specimen : the upper white band starts as a narrow strip from behind the upper corner of eye and widens behind opercle becoming indistinct well before the end of the dorsal fin; the lower band continues to the base of caudal fin; its width equals the width of the dark band which separates the two white bands (Fig. 2).

Remarks : *R. canadum* (English common name : cobia) is widely distributed in the warm waters of the Atlantic and Indo-Pacific Oceans except for the west coast of America. It has been reported from the west coast of Africa (Blache *et al.*, 1970) but not further to the north than the Atlantic coast of Morocco (Monod, 1973). Cobia has never been reported from the western Mediterranean although due to its distinct shape and colouration it would probably be noted if present. The Haifa specimen is evidently a Suez Canal immigrant. Cobia has been reported from the Red Sea by Rüppell (1836) from Massawa, by Klunzinger (1971) from Quseir, by Gruvel and Chabanaud (1937) from Port Suez and by Steinitz and Ben-Tuvia (1955) from Elat. Based on our observations cobia is often caught in the Gulf of Aqaba (Gulf of Elat). Live individuals have been kept in captivity and exhibited in outdoor ponds in the Underwater Observatory of Elat.

PEMPHERIDAE

Pempheris vanicolensis Cuvier , 1831 (Fig. 3)

Pempheris vanicolensis Cuvier, *in* Cuv. Val., 1831, Hist. nat. Poiss. 7 : 305.

Material examined : Mediterranean : HUJ 9844 (5 spec.), 95-105 mm, Akko, 13 August 1979, trammel net, coll. D. Golani : HUJ 9845 (2 spec.), 113-120 mm, Jaffo, 8 August 1979, trammel net, coll. J. Fischthal; HUJ 9993 (3 spec.), 111-126 mm, Jaffo, 11 May 1980, trammel net, coll. D. Golani; HUJ 10897 (2 spec.), 99-120 mm, Jaffo, May 1980, trammel net, coll. D. Golani. Red Sea : HUJ 4727 (9 spec.), 65-76 mm, Ras Muhamed, 7 August 1968, coll. E. Clark; HUJ 5836 (11 spec.), 68-113 mm, Ras Abu Galum, 11 March 1972, coll. A. Ben-Tuvia; HUJ 10979 (29 spec.), 16-125 mm, Nuweiba, 3 August 1976, Rotenone at 5 m, coll. A. Ben-Tuvia.

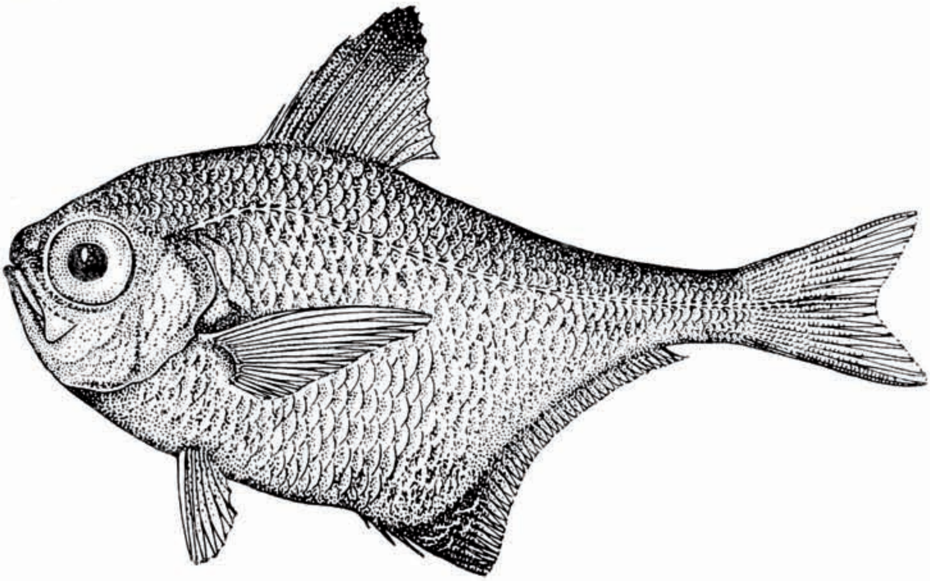

Fig. 3.– *Pempheris vanicolensis*, 105 mm, Akko, HUJ 9844. (from Ben-Tuvia, A., in preparation, Fauna Palaestina, Pisces I, Mediterranean Fishes).

Description : D VI-VII 8-9 (usually VI 9); A 32-41 ; V I 5; P. 16-18; L.L. scales 50-58; gillrakers 18-22, 7-9. In adults : head 30.2-31.8 ; depth 42.4-49.3, all % SL.

Snout 16.6-19.1; eye 39.7-42.9, all % head length. Counts, measurements and colour pattern agree with Randall (1983).

Remarks : *Pempheris vanicolensis* is widely distributed in the Indo-Pacific Ocean and in the Red Sea. Its presence in the Mediterranean Sea was recorded for the first time from the coast of Lebanon (Mouneimne, 1979) under the name of *P. molucca* Cuvier. *P. vanicolensis,* although evidently a new Suez Canal immigrant (Ben-Tuvia, 1985) was found to be in the recent years one of the most common fish among rocks and caves along the coast of Israel.

CARANGIDAE

Caranx dentex (Bloch and Schneider, 1801)

Scomber dentex Bloch and Schneider, 1801, Blochii Syst. Ichth : 30, type locality : Brazil.

Material examined : HUJ 8119, 95 mm, Neve Yam, 11 May 1975, coll. A. Ben-Tuvia; HUJ 9838, 153 mm, Jaffo, 25 June 1979, trammel net, coll. D. Golani; HUJ 10866 (3 spec.), 94-101 mm, Palmachim, 10 June 1982, experimental beach seine, coll. A. Ben-Tuvia; HUJ 11579, 292 mm, Haifa Bay, 30 November 1984, trammel net, coll. S. Pisanty.

Description : D VIII 24-26; A II + 20-22; V I 5; P I 19-20; Gillrakers 27, 10; head 33.0-36.2; depth 37.9-40, all % SL. Snout 36.8-42.3; eye 14.9-25.0, all % head length (larger in small specimens). Counts and measurements agree with Tortonese (1961) and Bini (1968).

Remarks : *Caranx dentex* is reported to be a cosmopolitan species (Hureau and Tortonese, 1973). Its presence in the eastern Mediterranean has been reported from Egypt (Geoffroy Saint-Hilaire, 1817), Greece (Ondrias, 1971) and Lebanon (Mouneimne, 1977).

SPARIDAE

Dentex maroccanus Valenciennes 1830

Dentex maroccanus Valenciennes, 1830, *in* Cuv. Val., Hist. nat. Poiss., 6 , 174; type locality : Morocco.

Material examined : HUJ 3612 (7 spec.), 75-91 mm, Ashkelon, 1 May 1936, coll. Aharoni. HUJ 10309, 104 mm, 27 April 1975, trawl, depth 200 m, coll. A. Ben-Tuvia.

Description : D XII 10; A III 7-8 (usually 8); V. 15; P 13-15; L.L. scales 46-75; gillrakers 11-12, 7; head 35.9-39.4, all % SL. Snout 30.6-33.0; eye 31.8-36.3, all

% head. Counts of rays in anal and pectoral fins are lower than those given by Bini (1968).

Remarks : *Dentex maroccanus* is caught occasionally along the coast of Israel by trawl in depths greater than 100 m. In the eastern Mediterranean it was reported from Greece (Ondrias, 1971) and Lebanon (Mouneimne, 1977).

GOBIIDAE

Chromogobius quadrivittatus (Steindachner, 1863)

Gobius quadrivittatus Steindachner, 1863, *Arch. Zool. Anat. Fisiol.*, 2 : 341, type locality : 'Mare Adriaticum prope Lesinam'.

Material examined : HUJ 6891 (4 spec.), 32-46 mm, Neve Yam, 23 June 1974, coll. A. Ben-Tuvia; HUJ 11016 (2 spec.), 12-14 mm, Dor, 4 June 1981, rock pools, coll. A. Ben-Tuvia and D. Golani; HUJ 11291 (2 spec.), 32-52 mm, Habonim, 10 October 1983, among rocks at 1 m depth, coll. D. Golani and A. Diamant

Description : D VII I 10; A I 9; V 15; P 16-17. Head 28.3-29.2; depth 16.5-18.4, all % SL. Snout 15.3-19.5; eye 16.0-22.1 in head. Counts and measurements agree with Bini (1969), Lozano y Rey (1960) and Miller (1971). Colour of fresh specimen similar to the description given by Bini (1969) but the colour somewhat darker and more purple.

Remarks : *Ch. quadrivittatus* was reported from the coast of Lebanon (Mouneimne, 1977). A closely related *Ch. zebrus levanticus* Miller was reported from the Mediterranean coast of Israel.

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